

Ludlow, Jan

From: Soderquist, Arlen
Sent: Tuesday, October 07, 2003 9:13 AM
To: Ludlow, Jan
Subject: RE: help?

Jan,

I don't think I will have time to do the case. I searched the compound in two ways: relatively specific for the chiral structure bonded to the nitrogen and generic for an alkyl chain bonded to the nitrogens. With the second structure search I searched on chiral or equivalent terminology to detect a chiral molecule. I have included the search and results (minus the references that clearly did not deal with chiral molecules, e.g. cd-r, cds or cd with reference to cadmium). The first structure search appears to indicate that the applicant's are the first one to have a compound that meets the limitation of claim 17. the second search appears to fall into two groups: those in which the dye becomes optically active (formation of J-aggregates) on bonding and those in which the dye is chiral (e.g. answer 46). I will leave all of these answers in the results and you can edit it as you see fit. If you have questions I will be happy to help what I can.

-----Original Message-----

From: Ludlow, Jan
Sent: Monday, October 06, 2003 5:59 PM
To: Soderquist, Arlen
Subject: help?

Arlen,

I have an election on a written restriction, FAOM due 10/20, and they elected the compound. I have of course left it too late to transfer back over to 1600 where I think it belongs. I will be out of the office for the rest of the week on sick leave, taking care of my mother. So I have a multi-level favor to ask:

1. If you would have time to examine the case this biweek, could I transfer the case to you?
2. If you don't have time to examine it, might you have time to do a search? (Jill said you could take other time for helping me.)

If you have time for neither of these things, I will get a STIC search, and do my best (although I still may ask you questions if I don't understand the case/art).

I'll leave the case in your mailbox so you can see if you want it.

Thanks for your consideration,
Jan

[Soderquist, Arlen]

=> d his

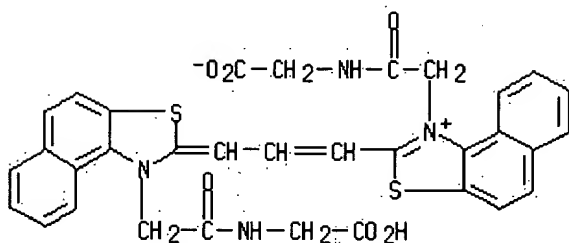
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FILE 'REGISTRY' ENTERED AT 07:46:05 ON 07 OCT 2003
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L2          STRUCTURE UPLOADED
L3          0 S L1-2
L4          7 S L1-2 FULL
FILE 'CA' ENTERED AT 07:50:21 ON 07 OCT 2003
L5          2 S L4
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=> d 14 1-7

```
L4  ANSWER 1 OF 7  REGISTRY  COPYRIGHT 2003 ACS on STN
RN  501369-71-7  REGISTRY
CN  Naphtho[1,2-d]thiazolium, 1-[2-[(carboxymethyl)amino]-2-oxoethyl]-2-[3-[1-
```

[2-[(carboxymethyl)amino]-2-oxoethyl]naphtho[1,2-d]thiazol-2(1H)-ylidene]-1-propenyl]-, inner salt, monosodium salt (9CI) (CA INDEX NAME)

MF C33 H26 N4 O6 S2 . Na
SR CA
LC STN Files: CA, CAPLUS

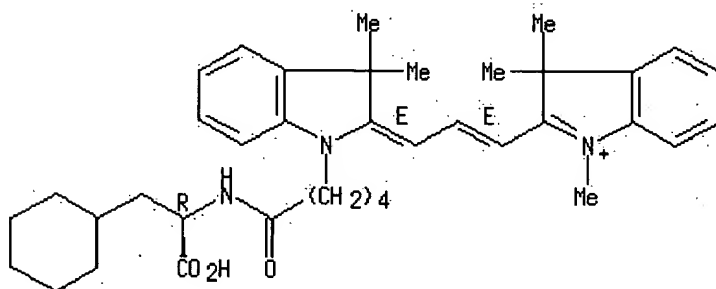


Na

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 2 OF 7 REGISTRY COPYRIGHT 2003 ACS on STN
RN 352674-01-2 REGISTRY
CN 3H-Indolium, 2-[(1E,3E)-3-[1-[5-[[[(1R)-1-carboxy-2-cyclohexylethyl]amino]-5-oxopentyl]-1,3-dihydro-3,3-dimethyl-2H-indol-2-ylidene]-1-propenyl]-1,3,3-trimethyl-, iodide (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C38 H50 N3 O3 . I
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

Absolute stereochemistry.
Double bond geometry as shown.



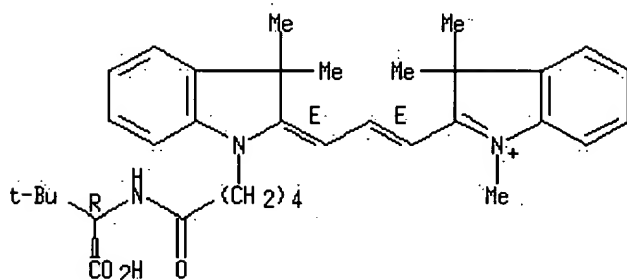
I-

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 3 OF 7 REGISTRY COPYRIGHT 2003 ACS on STN
RN 352674-00-1 REGISTRY
CN 3H-Indolium, 2-[(1E,3E)-3-[1-[5-[[[(1R)-1-carboxy-2,2-dimethylpropyl]amino]-5-oxopentyl]-1,3-dihydro-3,3-dimethyl-2H-indol-2-ylidene]-1-propenyl]-1,3,3-trimethyl-, iodide (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C35 H46 N3 O3 . I
SR CA

LC STN Files: CA, CAPLUS, USPATFULL

Absolute stereochemistry.
Double bond geometry as shown.

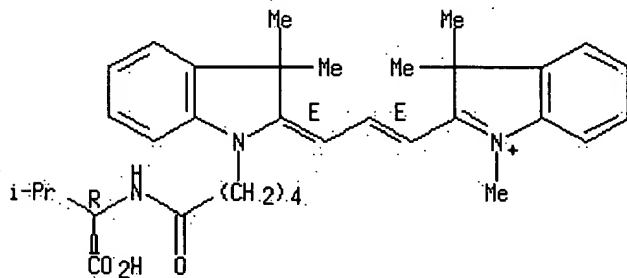


I⁺

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 4 OF 7 REGISTRY COPYRIGHT 2003 ACS on STN
RN 352673-99-5 REGISTRY
CN 3H-Indolium, 2-[(1E,3E)-3-[1-[5-[[[(1R)-1-carboxy-2-methylpropyl]amino]-5-oxopentyl]-1,3-dihydro-3,3-dimethyl-2H-indol-2-ylidene]-1-propenyl]-1,3,3-trimethyl-, iodide (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C34 H44 N3 O3 . I
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

Absolute stereochemistry.
Double bond geometry as shown.

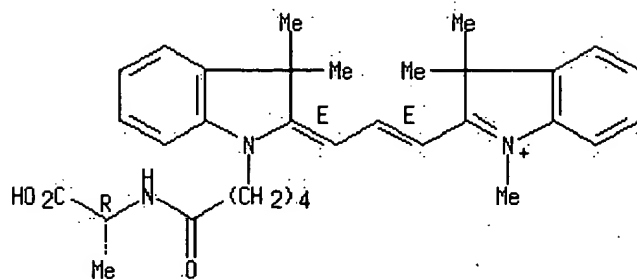


I⁺

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 5 OF 7 REGISTRY COPYRIGHT 2003 ACS on STN
RN 352673-98-4 REGISTRY
CN 3H-Indolium, 2-[(1E,3E)-3-[1-[5-[[[(1R)-1-carboxyethyl]amino]-5-oxopentyl]-1,3-dihydro-3,3-dimethyl-2H-indol-2-ylidene]-1-propenyl]-1,3,3-trimethyl-, iodide (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C32 H40 N3 O3 . I
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

Absolute stereochemistry.
Double bond geometry as shown.

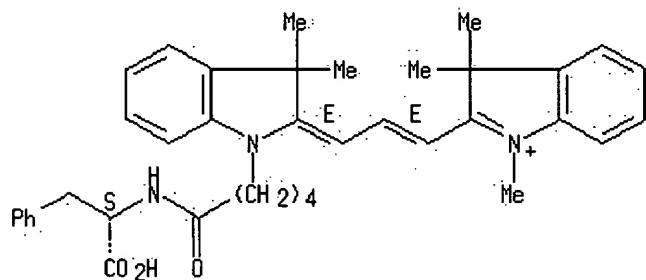


I⁻

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 6 OF 7 REGISTRY COPYRIGHT 2003 ACS on STN
RN 352673-93-9 REGISTRY
CN 3H-Indolium, 2-[(1E,3E)-3-[1-[5-[[[(1S)-1-carboxy-2-phenylethyl]amino]-5-oxopentyl]-1,3-dihydro-3,3-dimethyl-2H-indol-2-ylidene]-1-propenyl]-1,3,3-trimethyl-, iodide (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C38 H44 N3 O3 . I
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

Absolute stereochemistry.
Double bond geometry as shown.

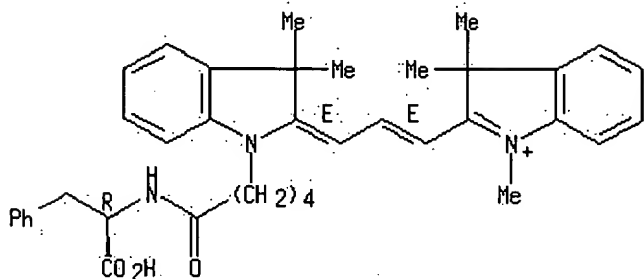


I⁻

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 7 OF 7 REGISTRY COPYRIGHT 2003 ACS on STN
RN 352673-91-7 REGISTRY
CN 3H-Indolium, 2-[(1E,3E)-3-[1-[5-[[[(1R)-1-carboxy-2-phenylethyl]amino]-5-oxopentyl]-1,3-dihydro-3,3-dimethyl-2H-indol-2-ylidene]-1-propenyl]-1,3,3-trimethyl-, iodide (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C38 H44 N3 O3 . I
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

Absolute stereochemistry.
Double bond geometry as shown.



I-

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d bib,ab 1-2 15

L5 ANSWER 1 OF 2 CA COPYRIGHT 2003 ACS on STN

Full Text <[https://chemport.cas.org/cgi-bin/cp_sdcgi?](https://chemport.cas.org/cgi-bin/cp_sdcgi?AzQGTmljMT2mGWGUif@d0gxVTGBu7XmLZlV7gRzo4EMpP@BtJNw3hj1Ne7GmPZUV4d1NAWgN2Bx9yEgljg_AymFNGg00rKXfbSxvBPbpS3DovYkP6pauBNj4En2ry4Fc0Exa7ieNkMWSrJwwFUGK1DL008OH)

[AzQGTmljMT2mGWGUif@d0gxVTGBu7XmLZlV7gRzo4EMpP@BtJNw3hj1Ne7GmPZUV4d1NAWgN2Bx9yEgljg_AymFNGg00rKXfbSxvBPbpS3DovYkP6pauBNj4En2ry4Fc0Exa7ieNkMWSrJwwFUGK1DL008OH](https://chemport.cas.org/cgi-bin/cp_sdcgi?AzQGTmljMT2mGWGUif@d0gxVTGBu7XmLZlV7gRzo4EMpP@BtJNw3hj1Ne7GmPZUV4d1NAWgN2Bx9yEgljg_AymFNGg00rKXfbSxvBPbpS3DovYkP6pauBNj4En2ry4Fc0Exa7ieNkMWSrJwwFUGK1DL008OH)>

AN 138:245483 CA

TI Heat-developable photographic materials with suppressed discoloration, method for decoloring dyes contained in them, and thermal recording materials using dye decoloration

IN Yabuki, Yoshiharu; Suzuki, Akira; Suzuki, Keiichi

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 57 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003075964	A2	20030312	JP 2001-268981	20010905
PRAI	JP 2001-268981		20010905		

OS MARPAT 138:245483

AB The photog. materials comprise a support, a photosensitive layer contg. silver halides and reductants, and non-photosensitive layer, wherein at least one of the layers contains dye assoc. (as filters, for halation prevention, irradsn. prevention, etc.) and bases chem. sepd. from the dyes for decoloring them. The dye assoc., preferably methine dyes, are decolored by heating in the presence of the bases.

L5 ANSWER 2 OF 2 CA COPYRIGHT 2003 ACS on STN

Full Text <[https://chemport.cas.org/cgi-bin/cp_sdcgi?](https://chemport.cas.org/cgi-bin/cp_sdcgi?7z7GTmzjjT2mGWRif@d0gxVTGBu7XmLZlV7gRzo4EMpP@BsJNw3hj1Ne7GmPZUV4d1N8WgN2Bx9yEgljg_ArmFNGg00rKXfbSxvHPbpS3DovYkP6pauBNj4En2ry4Fc0Exa7ieNkMWSLJwwFUGA1DL00IOq)

[7z7GTmzjjT2mGWRif@d0gxVTGBu7XmLZlV7gRzo4EMpP@BsJNw3hj1Ne7GmPZUV4d1N8WgN2Bx9yEgljg_ArmFNGg00rKXfbSxvHPbpS3DovYkP6pauBNj4En2ry4Fc0Exa7ieNkMWSLJwwFUGA1DL00IOq](https://chemport.cas.org/cgi-bin/cp_sdcgi?7z7GTmzjjT2mGWRif@d0gxVTGBu7XmLZlV7gRzo4EMpP@BsJNw3hj1Ne7GmPZUV4d1N8WgN2Bx9yEgljg_ArmFNGg00rKXfbSxvHPbpS3DovYkP6pauBNj4En2ry4Fc0Exa7ieNkMWSLJwwFUGA1DL00IOq)>

AN 135:161827 CA

TI Method for analysis of reaction products

IN Shair, Matthew D.; Korbel, Gregory A.; Lalic, Gojko

PA President and Fellows of Harvard College, USA

SO PCT Int. Appl., 101 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI WO 2001057526 A1 20010809 WO 2001-US4005 20010207
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,
HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
US 2002090728 A1 20020711 US 2001-778708 20010207
PRAI US 2000-180664P P 20000207
OS MARPAT 135:161827
AB The present invention provides methods, compds., and kits useful in the
anal. of reaction products and components of reaction mixts., and in
certain embodiments for the rapid and simultaneous detn. of enantiomeric
ratios, percent conversions, and abs. configurations.

=> log y
STN INTERNATIONAL LOGOFF AT 07:52:13 ON 07 OCT 2003

=> d his

(FILE 'HOME' ENTERED AT 07:57:37 ON 07 OCT 2003)
FILE 'REGISTRY' ENTERED AT 07:57:46 ON 07 OCT 2003
L1 STRUCTURE UPLOADED
L2 STRUCTURE UPLOADED
L3 50 S L1-2
L4 6985 S L1-2 FULL
FILE 'CA' ENTERED AT 08:00:08 ON 07 OCT 2003
L5 3749 S L4
L6 13 S L5 AND CHIRAL?
L7 83 S L5 AND (OPTICALLY ACTIVE OR CD OR DICHROI?)
L8 87 S L6-7

=> d bib,ab 1-87 18

L8 ANSWER 18 OF 87 CA COPYRIGHT 2003 ACS on STN
Full Text <https://chemport.cas.org/cgi-bin/cp_sdcgi?m4Rd9lfo6H2lIy4gNS6sNznhi8XNoHC555V2Bp0tUGdVK4mk2d4NLF8hCSuTHnt6o8UAKgucYBHluWkKN4USbCgRlB9hsCCEGMDeDk4mXx4TMeTX7r2W8ZnrFszaO6ub2he6gpVdqzTldSETN00xCRTRH>

AN 135:15078 CA
TI Fluorescent in situ RT-PCR
IN Bacallao, Robert; Kher, Rajesh
PA Advanced Research + Technology Institute, USA
SO PCT Int. Appl., 49 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001042507	A1	20010614	WO 2000-US33460	20001207
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG US 2003059801 A1 20030327 US 2002-149461 20020918				

PRAI US 1999-169750P P 19991209
WO 2000-US33460 W 20001207

AB The present invention describes an in situ reverse transcriptase PCR method in which the background fluorescence is greatly reduced as compared to traditional in situ PCR. The fixed permeabilized cells are contacted with at least one restriction endonuclease to produce restriction digests. The cells are then contacted with a DNase to produce DNase digested cells following by incubation with a reverse transcription cocktail to produce a cDNA which is amplified using a PCR reaction. The sections from murine tissues were tested using in situ RT-PCR.

L8 ANSWER 19 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <https://chemport.cas.org/cgi-bin/cp_sdcgi?q45dH1fo6H21Iy41NS

[6sNznhi8XNoHC555V2Bp0tUGdVK4Tk2d4NLF8hCSuTHnt6o8jAkgucYBHlu WkKNQUSbCgRlB9hsCCEGdDedk4mXx4TMeTX7r2W8ZNRfszaO6ub2he6gpVdquTldSETu00x9RsR3>](https://chemport.cas.org/cgi-bin/cp_sdcgi?q45dH1fo6H21Iy41NS)

AN 134:72908 CA

TI **Chiral** J-aggregates formed by achiral cyanine dyes

AU Kirstein, Stefan; von Berlepsch, Hans; Bottcher, Christoph; Burger, Christian; Ouart, Andre; Reck, Gunter; Dahne, Siegfried

CS Max-Planck-Inst. Colloids Interfaces, Golm/Potsdam, 14476, Germany

SO ChemPhysChem (2000), 1(3), 146-150 Published in: Angew. Chem., Int. Ed., 39(21)

CODEN: CPCHFT; ISSN: 1439-4235

PB Wiley-VCH Verlag GmbH

DT Journal

LA English

AB Helical J-aggregates are spontaneously formed by a nonchiral amphiphilic cyanine dye [5,5',6,6'-tetrachloro-1,1'-dioctyl-3,3'-bis(3-carboxypropyl)benzimidazacarbocyanine] in aq. NaOH. The reason for the induced **chirality** is revealed by X-ray structure anal. of a single crystal.

L8 ANSWER 20 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <https://chemport.cas.org/cgi-bin/cp_sdcgi?i4Rd9l2o6H21Iy48NS

[6sNznhi8XNoHC555V2Bp0tUGdVK4vk2d4NLF8hCSuTHnt6o8vAkgucYBHlu WkKNQUSbCgRlB9hsCCEGpDedk4mXx4TMeTX7r2W8ZNRfszaO6ub2he6gpVdquTldSETu00x9RTR3>](https://chemport.cas.org/cgi-bin/cp_sdcgi?i4Rd9l2o6H21Iy48NS)

AN 134:52771 CA

TI Binding of symmetrical cyanine dyes into the DNA minor groove

AU Mikheikin, A. L.; Zhuze, A. L.; Zasedatelev, A. S.

CS Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, 117984, Russia

SO Journal of Biomolecular Structure & Dynamics (2000), 18(1), 59-72

CODEN: JBSDD6; ISSN: 0739-1102

PB Adenine Press

DT Journal

LA English

AB Optical methods, such as fluorescence, **CD** and linear flow **dichroism**, were used to study the binding to DNA of four sym. cyanine dyes, each consisting of two identical quinoline, benzthiazole, indole, or benzoxazole fragments connected by a trimethine bridge. The ligands were shown to form a monomer type complex into the DNA minor groove. The complex of quinoline-contg. ligand with calf thymus DNA appeared to be the most resistant to ionic strength, and it did not dissociate completely even in 1 M NaCl. Binding of cyanine dyes to DNA could also be characterized by possibility to form ligand dimers into the DNA minor groove, by slight preference of binding to AT pairs, as well as by possible intercalation between base pairs of poly(dG)•poly(dC). The correlation found between the binding constants to DNA and the extent of cyanine dyes hydrophobicity established as the n-octanol/water partition coefficient is indicative of a significant role of hydrophobic interactions for the ligand binding into the DNA minor groove.

L8 ANSWER 21 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <https://chemport.cas.org/cgi-bin/cp_sdcgi?

[F@FRpTQlq0GToXgoW9Zxw4fZdoYymTy7WEZZS9lH5sut6ypkakLmk40slmgysWVZ5xXs5LNjG2f8plhbdNtQF@Jgg@](https://chemport.cas.org/cgi-bin/cp_sdcgi?)

IfZVQCKgJHTjw4mBt6umJldv2Ykdjsy4GmOTXxh 3mhHjhz3QAafLJSNSH39zIuI1>

AN 133:347314 CA

TI Vis- and CD-spectroscopic studies of the interaction of amphiphiles with **optically active** J-aggregates

AU Quart, Andre; Von Berlepsch, Hans; Boettcher, Christoph; Kirstein, Stefan; Daehne, Siegfried

CS Federal Institute for Materials Research and Testing, Berlin, 12489, Germany

SO Spectroscopy of Biological Molecules: New Directions, European Conference on the Spectroscopy of Biological Molecules, 8th, Enschede, Netherlands, Aug. 29-Sept. 2, 1999 (1999), 151-152. Editor(s): Greve, Jan; Puppels, Gerwin J.; Otto, Cees. Publisher: Kluwer Academic Publishers, Dordrecht, Neth.

CODEN: 68WFAJ

DT Conference

LA English

AB The achiral monomeric benzimidocarbocyanine dye C803 forms **optically active** J-aggregates in aq. soln. Their **chiral** supramol. structure can be influenced by cationic and anionic amphiphiles and this is observed using vis-, CD spectroscopy and cryoelectron microscopy. Results indicated that the dye C803 in its achiral monomeric form has an absorption max. at 520 nm in alc. soln. and no CD signal. By changing the polarity of the solvent upon addn. of 10 mM NaOH, three red shifted J-bands appear, which show Davydov-splitting and CD-couplet within the two long wavelength bands. These aggregates have a rope-like helix structure. By adding the anionic amphiphile sodium dodecylsulfate (SDS), a new absorption band occurs, which exhibits no CD signals proving that these aggregates are achiral. Addn. of SDS converts the helix-like aggregates into nanotubes. Also, addn. of cationic amphiphiles affects the absorption spectra and spherical vesicles are constructed.

L8 ANSWER 23 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <[https://chemport.cas.org/cgi-bin/cp_sdcgi?F@](https://chemport.cas.org/cgi-bin/cp_sdcgi?F@8RkTOLD0GToXgTW9Zxw4fZdoYymTy7WEZZS91H5sut6ypIakLmk4OslmgysWVZ5xXslLNjG2f8plhbdNtQp@Jgg@IfZVQCKgJHnjw4mBt6umJldv2Ykdjsy4GmOTXxh 3mhHjhz3QWafLJSNSH39zIvIp)

[8RkTOLD0GToXgTW9Zxw4fZdoYymTy7WEZZS91H5sut6ypIakLmk4OslmgysWVZ5xXslLNjG2f8plhbdNtQp@Jgg@IfZVQCKgJHnjw4mBt6umJldv2Ykdjsy4GmOTXxh 3mhHjhz3QWafLJSNSH39zIvIp](https://chemport.cas.org/cgi-bin/cp_sdcgi?F@8RkTOLD0GToXgTW9Zxw4fZdoYymTy7WEZZS91H5sut6ypIakLmk4OslmgysWVZ5xXslLNjG2f8plhbdNtQp@Jgg@IfZVQCKgJHnjw4mBt6umJldv2Ykdjsy4GmOTXxh 3mhHjhz3QWafLJSNSH39zIvIp)>

AN 133:297646 CA

TI Proof of **chirality** of J-aggregates spontaneously and enantioselectively generated from achiral dyes

AU Spitz, Christian; Daehne, Siegfried; Quart, Andre; Abraham, Hans-Werner

CS Federal Institute for Materials Research and Testing, Berlin, D-12489, Germany

SO Journal of Physical Chemistry B (2000), 104(36), 8664-8669

CODEN: JPCBFK; ISSN: 1089-5647

PB American Chemical Society

DT Journal

LA English

AB The recently published claim that the achiral 5,5',6,6'-tetrachlorobenzimidacarbocyanine chromophore spontaneously and enantioselectively generates **chiral** J-aggregates when it is substituted in the 1,1'-position with n-alkyl groups longer than hexyl and in the 3,3'-position with 2-acidoethyl or 3-acidopropyl groups has been proved by embedding the J-aggregates of 1,1'-dioctyl-3,3'-bis(3-carboxypropyl)-5,5',6,6'-tetrachlorobenzimidacarbocyanine in a poly(vinyl alc.) (PVA) film and measuring the CD signal at defined observation angles. 1,1'-Dioctyl-3,3'-bis(4-carboxybutyl)-5,5',6,6'-tetrachlorobenzimidacarbocyanine, which is assumed to give achiral J-aggregates, has been investigated for comparison as well. Possible contributions of linear **dichroism** and birefringence of ordered mols. to the measured CD signal have been excluded by careful checks using both a plain PVA film and a film contg. monomers of a dye of known **chirality**.

L8 ANSWER 26 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <[https://chemport.cas.org/cgi-bin/cp_sdcgi?z@](https://chemport.cas.org/cgi-bin/cp_sdcgi?z@8RpTQlD0GToXg7W9Zxw4fZdoYymTy7WEZZS91H5sut6ypvAkLmk4OslmgysWVZ5xXs@LNjG2f8plhbdNtQP@Jgg@If)

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ZVQCKgJHljwt4mBt6umJldv2Ykdjsy4GmOTXxh 3mhHjhz3QcafLJSNSH39zIeIc>

AN 133:168716 CA
TI Morphological transcription of monolayer domains to aggregates: specific adsorption of cyanine dyes to pre-compressed **chiral** monolayers
AU Kimizuka, N.; Ohira, H.; Hattori, K.; Kunitake, T.
CS Graduate School of Engineering, Department of Chemistry and Biochemistry, Kyushu University, Fukuoka, 812-8581, Japan
SO Colloids and Surfaces, A: Physicochemical and Engineering Aspects (2000), 171(1-3), 265-274
CODEN: CPEAEH; ISSN: 0927-7757
PB Elsevier Science B.V.
DT Journal
LA English
AB Monolayer characteristics of **chiral** amphiphiles at the air-H₂O interface are studied using fluorescence microscopy. Presence of less-hydrated halide anions and anionic cyanine dye in the subphase exerted remarkable influence on the π -A isotherms and fluorescence images of NH₄⁺ monolayers. **Chiral** domain structures obsd. on pure H₂O were transcribed to that of cyanine dye aggregates, when they were adsorbed to pre-compressed monolayers. Specific binding of cyanine dyes to cryst. domains was required for the morphol. transcription process.

L8 ANSWER 30 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <[https://chemport.cas.org/cgi-bin/cp_sdcgi?](https://chemport.cas.org/cgi-bin/cp_sdcgi?r@FROTIINOMToXrbG9bxU4I2uojyyT07NEFZk9CH5sutzyrZZkLmk40smgysWVZ5xXswLNjG2f8plhbdNtQG@Jgg@I)

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AN 133:14300 CA
TI In situ method of analyzing cells by staining with multiple stains and using a spectral data collection device
IN Garini, Yuval; Mcnamara, George; Soenksen, Dirk G.; Cabib, Dario; Buckwald, Robert A.
PA Applied Spectral Imaging Ltd., Israel
SO PCT Int. Appl., 129 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 6

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000031534	A1	20000602	WO 1999-US27000	19991116
	W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	DE 29624210	U1	20010628	DE 1996-29624210	19961210
	US 6165734	A	20001226	US 1998-196690	19981120
	EP 1131631	A1	20010912	EP 1999-963904	19991116
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO			
	JP 2002530676	T2	20020917	JP 2000-584297	19991116
PRAI	US 1998-196690	A	19981120		
	US 1995-571047	A1	19951212		
	EP 1996-944834	A	19961210		
	US 1998-122704	A2	19980727		
	WO 1999-US27000	W	19991116		
AB	A method of in situ anal. of a biol. sample comprises the steps of (a) staining the biol. sample with N stains of which a first stain is selected from the group consisting of a first immunohistochem. stain, a first histol. stain and a first DNA ploidy stain, and a second stain is selected from the group consisting of a second immunohistochem. stain, a second				

histol. stain and a second DNA ploidy stain, with provisions that N is an integer greater than three and further that (i) if the first stain is the first immunohistochem. stain then the second stain is either the second histol. stain or the second DNA ploidy stain; (ii) if the first stain is the first histol. stain then the second stain is either the second immunohistochem. stain or the second DNA ploidy stain; whereas (iii) if the first stain is the first DNA ploidy stain then the second stain is either the second immunohistochem. stain or the second histol. stain; and (b) using a spectral data collection device for collecting spectral data from the biol. sample, the spectral data collection device and the N stains are selected so that a spectral component assocd. with each of the N stains is collectible. Figure (1) shows a block diagram illustrating the main components of an imaging spectrometer. Breast cancer tissue samples were stained with two histol. stains (hematoxylin and eosin), and four immunohistochem. stains (DAB, AEC, Fast Red, and BCIP/NBT) and measured using the Spectracube system.

L8 ANSWER 34 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <https://chemport.cas.org/cgi-bin/cp_sdcgi?

[a@FR0Ty1N0MT0XrsG9bxU4IZuoJyyT07NEFZk9cH5sutzyrPZkLmk40smgysWVZ5xXs5LNjG2f8plhbdNtQw@Jgg@IFZVQCKgJH4jwT4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QWafLJSNRH39zIvIp](https://chemport.cas.org/cgi-bin/cp_sdcgi?a@FR0Ty1N0MT0XrsG9bxU4IZuoJyyT07NEFZk9cH5sutzyrPZkLmk40smgysWVZ5xXs5LNjG2f8plhbdNtQw@Jgg@IFZVQCKgJH4jwT4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QWafLJSNRH39zIvIp)>

AN 131:29502 CA

TI Molecular Recognition of PNA-Containing Hybrids: Spontaneous Assembly of Helical Cyanine Dye Aggregates on PNA Templates

AU Smith, Jeffrey O.; Olson, Darren A.; Armitage, Bruce A.

CS Department of Chemistry, Carnegie Mellon University, Pittsburgh, PA, 15213, USA

SO Journal of the American Chemical Society (1999), 121(12), 2686-2695
CODEN: JACSAT; ISSN: 0002-7863

PB American Chemical Society

DT Journal

LA English

AB Sym. cyanine dyes contg. benzothiazole groups have been shown to bind with high affinity to a variety of PNA-contg. hybrids, including PNA/DNA duplexes, a PNA/PNA duplex, and a bisPNA/DNA triplex. Binding of a dicarbocyanine dye results in a 114 nm hypsochromic shift of the main visible absorption band. CD spectropolarimetry reveals exciton coupling between multiple chromophores bound to the same PNA/DNA or PNA/PNA duplex, demonstrating binding of the dye as an aggregate. A continuous variations expt. indicates that the dye binds as a 6(±1):1 complex with a 12 base pair PNA/DNA duplex. The dye aggregate forms in a highly cooperative manner and exhibits a temp.-dependent self-assembly behavior which is independent of the PNA/DNA hybridization event. Expts. with mismatched and parallel duplexes demonstrate a strong preference for a continuous, antiparallel helix as a template on which to assemble the helical dye aggregate. Successful binding of the dye to the duplex and triplex indicates that dyes assoc. with one another in the minor groove of the template. The 114 nm shift in absorption causes an instantaneous visible color change from blue to purple, providing a convenient method for detecting PNA hybridization with its complementary target sequence.

L8 ANSWER 36 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <https://chemport.cas.org/cgi-bin/cp_sdcgi?

[X@FRpTSlf0GT0XgRW9Zxw4fZdoYymTy7WEZZS91H5sut6ypQakLmk40slmgysWVZ5xXs9LNjG2f8plhbdNtQY@Jgg@IfZVQCKgJH4jwT4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QIafLJONrH39zIvIO](https://chemport.cas.org/cgi-bin/cp_sdcgi?X@FRpTSlf0GT0XgRW9Zxw4fZdoYymTy7WEZZS91H5sut6ypQakLmk40slmgysWVZ5xXs9LNjG2f8plhbdNtQY@Jgg@IfZVQCKgJH4jwT4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QIafLJONrH39zIvIO)>

AN 129:252378 CA

TI Incoherent energy migration in **optically active** J-aggregates

AU Saehne, S.; De Rossi, U.; Kirstein, S.; Pawlik, A.; Spitz, C.

CS Federal Institute Materials Research Testing, Berlin, Germany

SO IS&T's Annual Conference (1997), 50th, 106-110
CODEN: ISACFN

PB Society for Imaging Science and Technology

DT Journal

LA English

AB Depending on the nitrogen substituents of the 5,5',6,6'-

tetrachlorobenzimidacarbocyanine chromophore (1) two basically different types of J-aggregates are formed. One type having a single J-absorption band, like TDBC (TDBC = 5,5',6,6'-tetrachloro-1,1'-diethyl-3,3'-bis(4-sulfo-n-butyl)benzimidacarbocyanine), shows the phenomenon of coherent energy migration well characterized by time-resolved spectroscopy in the past. The other type exhibits a Davydov-split J-absorption band whose spectroscopical features, like the non-exponential fluorescence decay, the decrease of its fluorescence lifetime with increasing temp., the strong dependence of its fluorescence lifetime on the emission wavelength, the dependence of the position and shape of its fluorescence spectrum on the time delay of measurement, the pressure dependence of its absorption spectrum, and its optical activity cannot be understood on the basis of coherent energy migration. A consistent description of all properties obsd. provides the theory of incoherent energy migration. Presumably it is the degree of disorder which detts. the kind of energy migration.

L8 ANSWER 38 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <https://chemport.cas.org/cgi-bin/cp_sdcgi?

[X@aR0T0L50GT0XgcW9Zxw4fZdoYmTy7WEZZS91H5sut6ypYprakLmk4OsImgySWVZ5xXskLNjG2f8plhbdNtQO@Jgg@IfZVQCKgJHFjw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QWafLJONFH39zIuIO](https://chemport.cas.org/cgi-bin/cp_sdcgi?X@aR0T0L50GT0XgcW9Zxw4fZdoYmTy7WEZZS91H5sut6ypYprakLmk4OsImgySWVZ5xXskLNjG2f8plhbdNtQO@Jgg@IfZVQCKgJHFjw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QWafLJONFH39zIuIO)>

AN 128:322840 CA

TI Architecture of J-aggregates studied by pressure-dependent absorption and fluorescence measurements

AU Spitz, Christian; Daehne, Siegfried

CS Bundesanstalt Materialforschung -Pruefung, Berlin, D-12489, Germany

SO Berichte der Bunsen-Gesellschaft (1998), 102(5), 738-744

CODEN: BBPCAX; ISSN: 0940-483X

PB Wiley-VCH Verlag GmbH

DT Journal

LA English

AB The spectral shift of absorption and fluorescence bands as well as the fluorescence decay of 4 J-aggregate-forming 5,5',6,6'-tetrachlorobenzimidacarbocyanine dyes were investigated in soln. under high pressure ≤50 kbar. The investigated dyes differ only in their 1,1' and 3,3' N substituents which do not influence the chromophore itself. Whereas the spectral behavior of the monomeric dyes is comparable to that of arom. and polyenic compds., the J-aggregates show some unusual spectral features. Two types of J-aggregates can be distinguished. One type exhibits a linear dependence of the absorption and fluorescence max. on pressure with vanishing Stokes shift over the whole pressure range. The 2nd type is characterized by a limited shift of the absorption band to longer wavelengths whereas the Stokes shift increases even at pressures where the absorption energy remains const. The spectral behavior of the 1st type is consistent with the well-known chain-shaped or brick stone-like structure of J-aggregates. As one dye of the 2nd type is known to form **optically active**, Davydov-split J-aggregates the pressure-dependent spectral behavior of such dyes corroborates the assumption that their J-aggregates consists of helical cylindrical micelles.

L8 ANSWER 39 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <https://chemport.cas.org/cgi-bin/cp_sdcgi?L@

[8RkT1lf0GT0XglW9Zxw4fZdoYmTy7WEZZS91H5sut6ypJakLmk4OsImgySWVZ5xXszLNjG2f8plhbdNtQU@Jgg@IfZVQCKgJHgjw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QIafLJONFH39zIeIo](https://chemport.cas.org/cgi-bin/cp_sdcgi?L@8RkT1lf0GT0XglW9Zxw4fZdoYmTy7WEZZS91H5sut6ypJakLmk4OsImgySWVZ5xXszLNjG2f8plhbdNtQU@Jgg@IfZVQCKgJHgjw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QIafLJONFH39zIeIo)>

AN 128:181628 CA

TI Cyanine Borate Penetrated Ion Pair Structures in Solution and the Solid State: Induced Circular **Dichroism**

AU Owen, David J.; VanDerveer, Donald; Schuster, Gary B.

CS Departments of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, GA, 30332-0400, USA

SO Journal of the American Chemical Society (1998), 120(8), 1705-1717

CODEN: JACSAT; ISSN: 0002-7863

PB American Chemical Society

DT Journal

LA English

AB An induced **CD** spectrum is obsd. for 1,1',3,3,3',3'-hexamethyl-9-phenylindocarbocyanine, 1,1'-diethyl-2,2'-cyanine, 1,1'-bis(3,5-di-tert-butyl)benzyl-2,2'-cyanine, or 1,1'-bis(4-tert-butyl)benzyl-2,2'-cyanine when penetrated into a **chiral** cavity of either spirobi[(2-methyl)borataxanthene] or spirobi[(3-methyl)borataxanthene]. Within the ion pair, the cyanine dye exists in two (or more) interconverting conformations of unequal energy. Solid-state structural evidence suggests that a nitrogen-forward mode for penetration by the cyanine dominates the soln. behavior. A crit. feature for the observation of induced **CD** is that the dye is twisted in the ground state. The free energy difference between the diastereomers with right- and left-handed twist in the **chiral** cavity of the borate is less than 1 kcal/mol, but this is sufficient to induce the **CD** spectrum. The magnitude of the obsd. **CD** spectrum is dependent on the structure of both the cyanine and borate.

L8 ANSWER 41 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <[https://chemport.cas.org/cgi-bin/cp_sdcgi?X@](https://chemport.cas.org/cgi-bin/cp_sdcgi?X@8RkT5lNOMToXrG9bxU4IZuojjyyT07NEFZk9cH5sutzyrEZkLmk40smgysWVZ5xXsQLNjG2f8plhbdNtQ4@Jgg@IfZVQCKgJHTjw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjh3QWafLJON0H39uIeIQ)

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AN 127:57265 CA

TI Structural Conditions for Spontaneous Generation of Optical Activity in J-Aggregates

AU Pawlik, Andreas; Kirstein, Stefan; De Rossi, Umberto; Daehne, Siegfried

CS Max-Planck Institute for Colloids and Interfaces, Berlin, D-12489, Germany

SO Journal of Physical Chemistry B (1997), 101(29), 5646-5651

CODEN: JPCBFK; ISSN: 1089-5647

PB American Chemical Society

DT Journal

LA English

AB Achiral mols. of 5,5',6,6'-tetrachlorobenzimidacarbocyanine dyes having 1,1'-di-n-alkyl substituents longer than hexyl combined with 3,3'-bis(2-acidoethyl) or 3,3'-bis(3-acido-n-propyl) substituents form J-aggregates whose absorption spectrum exhibits Davydov-split subbands that display strong **CD**, indicating the enantioselective formation of **chiral** J-aggregates. In this way, for the first time, in the liq. phase self-organization of achiral dye mols. to **chiral** supramol. aggregates has been realized which can be controlled by the mol. structure of the monomeric precursors. A helix-like, cylindric structure of the **chiral** J-aggregates is suggested. The results expose an interesting model for studying and understanding enantioselective processes in the biosphere.

L8 ANSWER 43 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <[https://chemport.cas.org/cgi-bin/cp_sdcgi?L@](https://chemport.cas.org/cgi-bin/cp_sdcgi?L@8RkTQlSOGToXgSW9Zxw4fZdoYymTy7WEZZS9lH5sut6ypeakLmk40slmgysWVZ5xXs3LNjG2f8plhbdNtQJ@Jgg@IfZVQCKgJHsjw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjh3QAafLJONlH39zIuIR)

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AN 126:331619 CA

TI Helically twisted **chiral** cyanine dyes: influence of chromophore length on observed and calculated rotatory strengths

AU Eggers, Lutz; Kolster, Klaus; Buss, Volker

CS Fachgebiet Theoretische Chemie, Universitat Duisburg, Duisburg, Germany

SO Chirality (1997), 9(3), 243-249

CODEN: CHRLEP; ISSN: 0899-0042

PB Wiley-Liss

DT Journal

LA English

AB Synthesis, chiroptical properties, and quantum-mech. calcns. of a monomethine dye and of two trimethine dyes are reported. In the monomethine and one of the trimethine dyes, the chromophore is forced into a twisted all-2-conformation by steric interaction of the end groups in the former and the presence of a tert-Bu group in the mesoposition of the latter, which is manifest in the UV/Vis spectra not only in the reduced intensity of the longest wavelength absorption, but also in the occurrence, at shorter wavelength, of a "cis-peak.". **Chiral** substitution of the end groups serves as a **chiral** anchor to discriminate

between otherwise enantiomeric forms and makes them amenable to chiroptical investigation. The results are in agreement with theor. calcd. chiroptical data based on helically twisted cyanine chromophores. They support the contention that not only the sense of the helix, but also its length det. the sign of the assocn. Cotton effect.

L8 ANSWER 45 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <[https://chemport.cas.org/cgi-bin/cp_sdcgi?](https://chemport.cas.org/cgi-bin/cp_sdcgi?u@8R0THlNOMToXrbG9bxU4IZuoJyyT07NEFZk9cH5sutzyrOZkLmk40smgysWVZ5xXs3LNjG2f8plhbdNtQW@Jgg@IfzVQCKgJHvJw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QWafLJONQH39uIvIm)

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AN 125:234226 CA

TI Complex formation of photofunctional polypeptide with cyanine dye and its photoconductive characteristics

AU Nagoshi, Masanori; Yoshida, Manabu; Tuda, Hajime; Kami, Hidetoshi; Kobayashi, Norihisa; Hirohashi, Ryo

CS Faculty of Engineering, Chiba University, Chiba, 263, Japan

SO Nippon Shashin Gakkaishi (1996), 59(3), 457-464

CODEN: NSGKAP; ISSN: 0369-5662

PB Nippon Shashin Gakkai

DT Journal

LA Japanese

AB A polypeptide having about 50% carbazoyl groups (Poly { γ [β -(N-carbazoyl) ethyl]-L-glutamate; methyl-L-glutamate} copolypeptide) (PC 50 LG) was synthesized. The molar ellipticity corresponding to the α -helical structure of PC 50 LG was considerably increased by adding a cyanine dye both in soln. and in film. This can be attributed to the change in the main chain structure of PC 50 LG and/or the conformation of side chain caused by the interaction between conjugated π -electron of carbazoyl group on PC 50 LG side chain and conjugated π -electron of cyanine dye. The induced CD (ICD) was also found in the absorption band corresponding to the cyanine dye both for the film and for the soln. contg. PC 50 LG and cyanine dye. Further, the shape and magnitude of this ICD significantly varied with the methine length in cyanine dye. Taking the mol. length of the cyanine dyes and the estd. mol. structure of PC 50 LG into account, these results suggest that cyanine dyes interact with carbazoyl groups on α -helical chain of PC 50 LG and the conformation of the cyanine dye PC 50 LG complex is affected by the methine length in cyanine dye. The photocurrent of cyanine dye-doped PC 50 LG was also examd. Consequently, NK-76-doped PC 50 LG film, showing the strongest ICD in the present expt., gave about 10 times larger photocurrent than PC 50 OG film contg. no cyanine dye.

L8 ANSWER 46 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <[https://chemport.cas.org/cgi-bin/cp_sdcgi?u@](https://chemport.cas.org/cgi-bin/cp_sdcgi?u@8R0THlNOMToXrbG9bxU4IZuoJyyT07NEFZk9cH5sutzyrOZkLmk40smgysWVZ5xXs3LNjG2f8plhbdNtQW@Jgg@IfzVQCKgJHvJw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QWafLJONQH39uIvIm)

[8R0THlNOMToXrbG9bxU4IZuoJyyT07NEFZk9cH5sutzyrOZkLmk40smgysWVZ5xXs3LNjG2f8plhbdNtQW@Jgg@IfzVQCKgJHvJw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QWafLJONQH39uIvIm>](https://chemport.cas.org/cgi-bin/cp_sdcgi?u@8R0THlNOMToXrbG9bxU4IZuoJyyT07NEFZk9cH5sutzyrOZkLmk40smgysWVZ5xXs3LNjG2f8plhbdNtQW@Jgg@IfzVQCKgJHvJw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QWafLJONQH39uIvIm)

AN 125:60946 CA

TI Synthesis of the first **chiral** bisindolyl monomethinium cyanine dyes

AU Eggers, Lutz; Buss, Volker

CS Fachgebiet Theoretische Chemie, Universitaet-GH-Duisburg, Duisburg, D-47048, Germany

SO Liebigs Annalen (1996), (6), 979-983

CODEN: LANAEM; ISSN: 0947-3440

PB VCH

DT Journal

LA English

AB The synthesis of the **chiral** monomethine cyanine dyes I (R = Me, Pr) starting from the achiral indole II is described. Key intermediates are the new **chiral** Fischer bases R- and S-III, which were sepd. after diastereomeric salt formation. The conformation of I is twisted di-Z, according to NOE and dynamic NMR spectroscopy. The difference of the free energy between oppositely twisted conformations is ~ 2.5 kJ mol⁻¹.

L8 ANSWER 47 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <https://chemport.cas.org/cgi-bin/cp_sdcgi?F08RSTQ1S0GTOXgrW9Zxw4fZdoYymTy7WEZZS91H5sut6yp5akLmk40s1mgysWVZ5xXs@LNjG2f8plhbdNtQt@Jgg@IfZVQCKgJHijwt4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QIafLJONcH39zIuIO>

AN 124:327519 CA
TI Spontaneous formation of **chirality** in J-aggregates showing Davydov splitting
AU De Rossi, Umberto; Daehne, Siegfried; Meskers, Stefan C. J.; Dekkers, Harry P. J. M.
CS Bundesanstalt Materialforschung, Laboratorium Zeitaufgeloeste Spektroskopie, Berlin, D-12489, Germany
SO Angewandte Chemie, International Edition in English (1996), 35(7), 760-3
CODEN: ACIEAY; ISSN: 0570-0833
PB VCH
DT Journal
LA English
AB A way of designing **chiral** supramol. structures from achiral substances by combination of 2 principles, the self-assocn. of org. dyes and the hydrophobic interaction between long alkyl chains. Two new model benzimidocyanine systems I (R'=(CH₂)₃CO₂H, R = C₈H₁₇ or C₁₂H₂₅, A = Br) are reported which contain long alkyl chains and which spontaneously show optical activity due to aggregation of the achiral monomers to form **chiral** J-aggregates. The CD and visible spectra of the 2 system were studied. At room temp. model system I have the same properties. I(R = C₁₂H₂₅) forms aggregates in 0.01N NaOH as evidence by the spectra. Between 270 and 300 K I(R = C₁₂H₂₅) exists in 2 different types of aggregates showing 2 distinct J-absorption bands. These 2 aggregate system can be reversibly transformed into each other. This may be the first example for spontaneous formation of **chirality** through aggregation, and if one regards J-aggregation as a first step towards crystn., then the obsd. phenomena are comparable to the formation of **chirality** from racemic mixts. or achiral substances. The structure of the aggregates is discussed in addn. to g-factor estn. The optical purity of the aggregates supports the assumption of an autocatalytic process during the spontaneous formation of **optically active** J-aggregates.

L8 ANSWER 48 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <https://chemport.cas.org/cgi-bin/cp_sdcgi?u@FRSTm1DOGTOXgBW9Zxw4fZdoYymTy7WEZZS91H5sut6ypvakLmk40s1mgysWVZ5xXsNLNjG2f8plhbdNtQ1@Jgg@IfZVQCKgJHnjwt4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QIafLJONcH39zIvI1>

AN 124:249166 CA
TI Fluorescence and CD spectroscopic sugar sensing by a cyanine-appended diboronic acid probe
AU Takeuchi, Masayuki; Mizuno, Toshihisa; Shinmori, Hideyuki; Nakashima, Michio; Shinkai, Seiji
CS Department Chemical Science & Technology, Kyushu University, Fukuoka, 812, Japan
SO Tetrahedron (1996), 52(4), 1195-204
CODEN: TETRAB; ISSN: 0040-4020
PB Elsevier
DT Journal
LA English
AB A cyanine dye (I) bearing two boronic acids was designed and synthesized, expecting the selective binding of monosaccharides through the formation of 1:1 intramol. complexes. While it aggregates in water, it exists discretely in water/methanol 1:1 mixed solvent. In the latter solvent the fluorescence spectra were scarcely affected by the medium pH but efficiently increased when it formed intramol. 1:1 complexes with monosaccharides. This complexation mode was also corroborated by CD spectroscopy and continuous variation plots. Hence, the saccharide-induced fluorescence increase is rationalized in terms of rigidification of the cyanine skeleton. The assocn. consts. (K) were estd. from plots of saccharide concn. vs. fluorescence intensity: the largest K was obsd. for D-fructose (1.3 × 10⁵ M⁻¹) and the next for D-arabinose (1.0 × 10⁴ M⁻¹). This is a novel system for sensitive

and selective fluorescence detection of monosaccharides.

L8 ANSWER 49 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <[https://chemport.cas.org/cgi-bin/cp_sdcgi?](https://chemport.cas.org/cgi-bin/cp_sdcgi?F0aR0Tb150GToXg@W9Zxw4fZdoYymTy7WEZZS91H5sut6ypDakLmk40slmgysWVZ5xXs1LNjG2f8plhbdNtQ@@Jgg@IfZVQCKgJHxjw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QAafLJONch39zIeIO)

[F0aR0Tb150GToXg@W9Zxw4fZdoYymTy7WEZZS91H5sut6ypDakLmk40slmgysWVZ5xXs1LNjG2f8plhbdNtQ@@Jgg@IfZVQCKgJHxjw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QAafLJONch39zIeIO](https://chemport.cas.org/cgi-bin/cp_sdcgi?F0aR0Tb150GToXg@W9Zxw4fZdoYymTy7WEZZS91H5sut6ypDakLmk40slmgysWVZ5xXs1LNjG2f8plhbdNtQ@@Jgg@IfZVQCKgJHxjw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QAafLJONch39zIeIO)>

AN 124:127890 CA

TI Preparation of LB films of cyanine dyes using cyclodextrin modified by long chain alkyl, and dye molecular association in the films

AU Ota, Kazuo; Habu, Teiji; Okayama, Takumi

CS Faculty of Engineering, Tokyo Institute of Polytechnics, Atusgi, 243-03, Japan

SO Nippon Shashin Gakkaishi (1995), 58(4), 352-60

CODEN: NSGKAP; ISSN: 0369-5662

PB Nippon Shashin Gakkai

DT Journal

LA Japanese

AB We selected two cyanine dyes (NK 76, NK 467) which show hypsochromic shift of absorption maxima due to self-assocn. of two dye mols. in soln., and planned to regulate dye assocn. in LB film. The inclusion complex of dye and Trimethyl- β -cyclodextrin (TM- β -CD) was synthesized. It was found that NK 76 was included at the end of CD's cylindrical structure, whereas NK 467 in the cavity by analyzing CD spectra for mixt. of dye and TM- β -CD in chloroform soln. Hexakis (6-dodecylamino-deoxy)- β -CD (HDD- β -CD) was synthesized. LB films were prepd. using dye and HDD- β -CD changing the mixing ratio, dye : HDD- β -CD. Visible absorption spectra showed that at the mixing ratio, NK 76 : HDD- β -CD = 1:6, and NK 467 : HDD- β -CD = 1.7, assocn. of dye mol. disappeared.

L8 ANSWER 50 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <[https://chemport.cas.org/cgi-bin/cp_sdcgi?u@](https://chemport.cas.org/cgi-bin/cp_sdcgi?u@8RpTGlNOMToXrkG9bxU4IZuoJyyT07NEFZk9cH5sutzYr4ZkLmk40smgysWVZ5xXsDLNjG2f8plhbdNtQf@Jgg@IfZVQCKgJH9jw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QIafLJONch39uIvIp)

[8RpTGlNOMToXrkG9bxU4IZuoJyyT07NEFZk9cH5sutzYr4ZkLmk40smgysWVZ5xXsDLNjG2f8plhbdNtQf@Jgg@IfZVQCKgJH9jw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QIafLJONch39uIvIp](https://chemport.cas.org/cgi-bin/cp_sdcgi?u@8RpTGlNOMToXrkG9bxU4IZuoJyyT07NEFZk9cH5sutzYr4ZkLmk40smgysWVZ5xXsDLNjG2f8plhbdNtQf@Jgg@IfZVQCKgJH9jw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QIafLJONch39uIvIp)>

AN 124:69979 CA

TI Induced Circular **Dichroism** in Cyanine Borate Penetrated Ion Pairs

AU Owen, David; Schuster, Gary B.

CS Department of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, GA, 30332-0400, USA

SO Journal of the American Chemical Society (1996), 118(1), 259-60

CODEN: JACSAT; ISSN: 0002-7863

PB American Chemical Society

DT Journal

LA English

AB An induced CD spectrum is obsd. for 1,3,3,1',3',3'-hexamethyl-9-phenylindocarbocyanine when it is penetrated into a **chiral** cavity of bispiro(3-Me)borataxanthene. The ion pair exists in ≥ 2 interconverting conformations of unequal energy. A crit. feature for the detection of the induced CD spectrum is that the dye is twisted in the ground state. The free energy difference between the diastereomers with right- and left-handed twist in the **chiral** cavity of the borate is <1 kcal/mol, but is sufficient to induce the CD spectrum.

L8 ANSWER 51 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <[https://chemport.cas.org/cgi-bin/cp_sdcgi?r@](https://chemport.cas.org/cgi-bin/cp_sdcgi?r@8R0Ttlf0GToXg5W9Zxw4fZdoYymTy7WEZZS91H5sut6ypDakLmk40slmgysWVZ5xXsDLNjG2f8plhbdNtQO@Jgg@IfZVQCKgJH9jw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QcafLJONmH39zIeIc)

[8R0Ttlf0GToXg5W9Zxw4fZdoYymTy7WEZZS91H5sut6ypDakLmk40slmgysWVZ5xXsDLNjG2f8plhbdNtQO@Jgg@IfZVQCKgJH9jw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QcafLJONmH39zIeIc](https://chemport.cas.org/cgi-bin/cp_sdcgi?r@8R0Ttlf0GToXg5W9Zxw4fZdoYymTy7WEZZS91H5sut6ypDakLmk40slmgysWVZ5xXsDLNjG2f8plhbdNtQO@Jgg@IfZVQCKgJH9jw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QcafLJONmH39zIeIc)>

AN 122:163488 CA

TI **Chiral** polymethine dyes. V. Syntheses, absolute configuration, spectroscopic, and chiroptical properties of **chiral** dinuclear tri- and pentamethinium as well as trinuclear [2.2.2]heptamethinedium cyanine dyes with 3-sec-butyl-1,3-dimethylindolyl end groups

AU Reichardt, Christian; Budnik, Ulrich; Harms, Klaus; Schaefer, Gerhard;

Stein, Joerg
 CS Cent. Material Sci., Univ. Marburg, Marburg, D-35032, Germany
 SO Liebig's Annalen (1995), (2), 329-40
 CODEN: LANAEM; ISSN: 0947-3440
 PB VCH
 DT Journal
 LA English
 AB Starting with natural monochiral (-)-(S)-2-methyl-1-butanol generated by alc. ferms., we have synthesized the new monochiral heterocyclic iminium salt (+)-(3R,15S)-3-sec-butyl-1,2,3-trimethylindoleninium tetrafluoroborate in an eight-step reaction sequence. Important steps of this sequence are the zeolite-catalyzed Fischer synthesis of the monochiral indole from the phenylhydrazone of ketone and the sepn. of the diastereomeric salts by fourfold fractional recrystn. from ethanol. With the new quaternary iminium salt, new monochiral dinuclear tri- and pentamethinium cyanine dyes (I) as well as the trinuclear [2.2.2]heptamethinediium and [1.1.1]tetramethinium cyanine dyes have been synthesized. The abs. configuration of the four stereogenic centers in the cyanine dye I has been confirmed by means of an X-ray structural anal. Spectroscopical and chiroptical properties of all new cyanine dyes have been detd.

L8 ANSWER 52 OF 87 CA COPYRIGHT 2003 ACS on STN
 Full Text <https://chemport.cas.org/cgi-bin/cp_sdcgi?a@FRKT41N0MT0XrrG9bXU4IZuoJyyT07NEFZk9cH5sutzyr@ZkLmk40smgysWVZ5xXsuLNjG2f8plhbdNtQt@Jgg@fZVQCKgJHAjw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QIafLJONmH39zIuIR>
 AN 122:33528 CA
 TI Circular **dichroism** study of the cyclodextrin-mediated aggregation of cyanine dyes
 AU Buss, V.
 CS Fachgeb. Theor. Chem. der Univ., Duisburg, 4100, Germany
 SO Minutes Int. Symp. Cyclodextrins, 6th (1992), 160-5. Editor(s): Hedges, Allan R. Publisher: Ed. Sante, Paris, Fr.
 CODEN: 60BCAL
 DT Conference
 LA English
 AB Concn. and temp. dependent UV and **CD** spectroscopy reveal different stages of aggregation of the oxacarbocyanine dyes DOC, DODC, and DOTC in the presence of β - and γ -cyclodextrin. Induced **CD** is obsd. when only the monomer is incorporated, while the complexed dimer and higher n-mers exhibit well-resolved couplet spectra indicating an inherent twist of the aggregate. Exciton theory provides a qual. picture of the electronic structure of these structures.

L8 ANSWER 54 OF 87 CA COPYRIGHT 2003 ACS on STN
 Full Text <https://chemport.cas.org/cgi-bin/cp_sdcgi?r@8RkT31N0MT0XrHG9bXU4IZuoJyyT07NEFZk9cH5sutzyroZkLmk40smgysWVZ5xXs7LNjG2f8plhbdNtQv@Jgg@IfzVQCKgJHIjw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QIafLJpNSH39uIuIQ>
 AN 113:77361 CA
 TI Molecular mechanics studies on inclusion compounds of cyanine dye monomers and dimers in cyclodextrin cavities
 AU Ohashi, Masafumi; Kasatani, Kazuo; Shinohara, Hisanori; Sato, Hiroyasu
 CS Fac. Eng., Mie Univ., Tsu, 514, Japan
 SO Journal of the American Chemical Society (1990), 112(15), 5824-30
 CODEN: JACSAT; ISSN: 0002-7863
 DT Journal
 LA English
 AB Mol. mechanics calcns. were applied to monomers and dimers of cyanine dyes [3,3'-diethyloxacarbocyanine iodide (DOC), 3,3'-diethyloxadicarbocyanine iodide (DODC), and 3,3'-diethyloxatricarbocyanine iodide (DOTC)] in β - and γ -cyclodextrin (**CD**) cavities to explain the exptl. findings that DODC and DOTC dimers are included both in β - and γ -**CD** cavities and that the DOC dimer is included only in a γ -**CD** cavity. The calcns. show that the inclusion of dye dimers

into cyclodextrin leads to stabilization of the total system; however, the (DOC)2- β -CD system is much less stable than the others, in agreement with exptl. findings. Except for DOC and β -CD, the dimer dye systems are more stable than the corresponding monomer dye systems. This seemingly puzzling result can be rationalized in terms of the important role of the van der Waals stabilization energy.

L8 ANSWER 55 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <[https://chemport.cas.org/cgi-bin/cp_sdcgi?](https://chemport.cas.org/cgi-bin/cp_sdcgi?L@FRkT0lq0GToXgOW9Zxw4fZdoYymTy7WEZZS9lH5sut6ypVakLmk4Os1mgysWVZ5xXs5LNjG2f8plhbdNtQY@Jgg@If2VQCKgJHBjw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QWafLJpNmH39zIeIl)

[L@FRkT0lq0GToXgOW9Zxw4fZdoYymTy7WEZZS9lH5sut6ypVakLmk4Os1mgysWVZ5xXs5LNjG2f8plhbdNtQY@Jgg@If2VQCKgJHBjw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QWafLJpNmH39zIeIl](https://chemport.cas.org/cgi-bin/cp_sdcgi?L@FRkT0lq0GToXgOW9Zxw4fZdoYymTy7WEZZS9lH5sut6ypVakLmk4Os1mgysWVZ5xXs5LNjG2f8plhbdNtQY@Jgg@If2VQCKgJHBjw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QWafLJpNmH39zIeIl)>

AN 112:141234 CA

TI Synthesis, structure, and properties of novel chain-substituted and **chiral** trimethine cyanine dyes with indoline end groups

AU Reichardt, Christian; Engel, Horst Detlef; Allmann, Rudolf; Kucharczyk, Damian; Krestel, Magda

CS Fachbereich Chem., Univ. Marburg, Marburg, D-3550, Germany

SO Chemische Berichte (1990), 123(3), 565-81

CODEN: CHBEAM; ISSN: 0009-2940

DT Journal

LA German

AB The synthesis and spectral properties of the trimethine cyanine dyes α, α' -dimethyl-1,3-bis(1,3,3-trimethyl-2-indoliny)ltrimethinium tetrafluoroborate (I), α' -methyl-1-(3-ethyl-1,3-dimethyl-2-indoliny)l-3-(1,3,3-trimethyl-2-indoliny)ltrimethinium tetrafluoroborate (II) and iodide (III), (S,S)-(+)-1,3-bis(3-ethyl-1,3-dimethyl-2-indoliny)ltrimethinium tetrafluoroborate (IV), bromide (V), and iodide (VI), and the racemic/meso forms of IV (VII) and of VI were described. The structures of I, II, III, and VI were detd. by x-ray anal. Dye I existed in the di-cis (E,E,Z,Z) configuration. Attempts to prep. I in a base-catalyzed reaction led to the rearranged trimethine cyanine dyes II and III. Using this Wagner-Meerwein rearrangement, (S)-(-)-3-ethyl-1,2,3-trimethylindoleninium tetrafluoroborate (VIII), bromide, and iodide, were prepd., from which IV, V, and VI were obtained, resp. The UV-visible spectra of I, II, and VII and the CD spectra of IV and VIII were compared and discussed.

L8 ANSWER 56 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <[https://chemport.cas.org/cgi-bin/cp_sdcgi?K@](https://chemport.cas.org/cgi-bin/cp_sdcgi?K@8RkTmlq0GToXg3W9Zxw4fZdoYymTy7WEZZS9lH5sut6ypIakLmk4Os1mgysWVZ5xXs5LNjG2f8plhbdNtQk@Jgg@If2VQCKgJH8jw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QWafLJpNmH39zIeIm)

[8RkTmlq0GToXg3W9Zxw4fZdoYymTy7WEZZS9lH5sut6ypIakLmk4Os1mgysWVZ5xXs5LNjG2f8plhbdNtQk@Jgg@If2VQCKgJH8jw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QWafLJpNmH39zIeIm](https://chemport.cas.org/cgi-bin/cp_sdcgi?K@8RkTmlq0GToXg3W9Zxw4fZdoYymTy7WEZZS9lH5sut6ypIakLmk4Os1mgysWVZ5xXs5LNjG2f8plhbdNtQk@Jgg@If2VQCKgJH8jw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QWafLJpNmH39zIeIm)>

AN 112:100664 CA

TI Syntheses of several amphiphilic cyanine dyes and formation of Langmuir-Blodgett films

AU Tanaka, Motoo; Kawabata, Yasujiro; Nakamura, Takayoshi; Tachibana, Hiroaki; Manda, Eiichiro; Sekiguchi, Tatsuo

CS Natl. Chem. Lab. Ind., Tsukuba, 305, Japan

SO Nippon Kagaku Kaishi (1989), (10), 1807-9

CODEN: NKAKB8; ISSN: 0369-4577

DT Journal

LA Japanese

AB Several amphiphilic cyanine dyes having the phenylcyclohexyl group as a mesogenic group were synthesized and the formation of monolayers and Langmuir-Blodgett (LB) films were studied. The mixt. of p-(trans-4-pentylcyclohexyl)phenol (1 mol) and Br(CH₂)_nBr (n = 6, 8, 10) (1.1 mol) in ethanolic KOH soln. were refluxed to form ω -bromoalkyl p-(trans-4-pentylcyclohexyl)phenyl ethers (A). Two monomethinecyanine dyes (B) and four trimethinecyanine dyes (C) were obtained from (A). Surface pressure-area isotherms on a Cd-contg. aq. soln. showed that these dyes formed stable monolayers and the limiting areas per mol. were ~0.5 nm² for (B) and ~0.7 nm² for (C). The UV-visible spectra of the LB films were measured and discussed.

L8 ANSWER 57 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <https://chemport.cas.org/cgi-bin/cp_sdcgi?

[a@FRSTq1NOMToXrbG9bxU4IzuoJyyT07NEFZk9cH5sutzyrlZkLmk40smgysWVZ5xXsULNjG2f8plhbdNtQ7@Jgg@IfZVQCKgJHrjw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QAafLJpNRH39uIvI1](https://chemport.cas.org/cgi-bin/cp_sdcgi?a@FRSTq1NOMToXrbG9bxU4IzuoJyyT07NEFZk9cH5sutzyrlZkLmk40smgysWVZ5xXsULNjG2f8plhbdNtQ7@Jgg@IfZVQCKgJHrjw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QAafLJpNRH39uIvI1)>

AN 111:64514 CA

TI Monolayers and Langmuir-Blodgett films of amphiphilic dyes with mesogenic unit in the hydrophobic part: surface chemical and optical characterization

AU Matsumoto, Mutsuyoshi; Sekiguchi, Tatsuo; Tanaka, Hideaki; Tanaka, Motoo; Nakamura, Takayoshi; Tachibana, Hiroaki; Manda, Eiichiro; Kawabata, Yasujiro; Sugi, Michio

CS Natl. Chem. Lab. Ind., Tsukuba, 305, Japan

SO Journal of Physical Chemistry (1989), 93(15), 5877-82
CODEN: JPCHAX; ISSN: 0022-3654

DT Journal

LA English

AB The phenylcyclohexyl group, a mesogenic unit, was introduced into the hydrophobic part of amphiphilic cyanine and squarylium dyes, and the resultant modified dyes (CN-PH and SQ-PH) were compared with the usual amphiphilic mols. having hydrocarbon chains as hydrophobic parts (CN-Cl8 and SQ-Cl8). Surface pressure-area isotherms of the pure dyes present 2 marked features. The limiting areas of CN-PH and SQ-PH are larger than those of CN-Cl8 and SQ-Cl8. The expanded phases obsd. for CN-Cl8 and SQ-Cl8 are not seen for CN-PH and SQ-PH, suggesting a larger no. of mols. involved in a cluster at the air-water interface for CN-PH and SQ-PH than for CN-Cl8 and SQ-Cl8. This cluster formation is most likely due to the strong dispersion force between the mesogenic units leading to the lower miscibility of CN-PH and SQ-PH with C20 than CN-Cl8 and SQ-Cl8. The excess free energies of mixing for CN-PH and SQ-PH with Cd icosanoate (C20) are larger than those for CN-Cl8 and SQ-Cl8 with C20, indicating that CN-PH and SQ-PH are less miscible with C20 than CN-Cl8 and SQ-Cl8. The absorption spectra of mixed films also support the lower miscibility of CN-PH and SQ-PH with C20 than CN-Cl8 and SQ-Cl8. Large in-plane spectral anisotropy is obsd. for the mixed films of CN-PH with C20. Each spectrum is composed of 2 species: 1 is isotropically distributed in the layer plane, and the other is responsible for the in-plane anisotropy. The amt. of the latter transferred onto a solid substrate seems to decrease with a decrease in the dipping speed. This in-plane anisotropy is discussed referring to the two extreme models of the flow orientation of the crystallites at the air-water interface during the deposition process: the continuum model and the "channel-and-iceberg" model.

L8 ANSWER 58 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <https://chemport.cas.org/cgi-bin/cp_sdcgi?

[L@FRkTBlf0GToXgPW9Zxw4fZdoYymTy7WEZZS91H5sut6ypmakLmk40slmgysWVZ5xXsCLNjG2f8plhbdNtQY@Jgg@IfZVQCKgJHrjw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QcaflJkNSH39zIeI1](https://chemport.cas.org/cgi-bin/cp_sdcgi?L@FRkTBlf0GToXgPW9Zxw4fZdoYymTy7WEZZS91H5sut6ypmakLmk40slmgysWVZ5xXsCLNjG2f8plhbdNtQY@Jgg@IfZVQCKgJHrjw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QcaflJkNSH39zIeI1)>

AN 103:141298 CA

TI Polarized-light spectroscopic study of indocarbocyanine dyes solubilized in amphiphile aggregates

AU Johansson, Lennart B. A.; Vallmark, Tommy; Lindblom, Goeran

CS Dep. Phys. Chem., Univ. Umeaa, Umeaa, S-901 87, Swed.

SO Journal of the Chemical Society, Faraday Transactions 1: Physical Chemistry in Condensed Phases (1985), 81(6), 1389-400
CODEN: JCFTAR; ISSN: 0300-9599

DT Journal

LA English

AB Solubilization and fluorescence properties were examd. for indocarbocyanines I [R = Et, (CH₂)₁₃Me] in ionic and nonionic micelles and cubic liq. crystals. The steady-state anisotropy and fluorescence quantum yield were measured, and the radiative lifetime of both dyes detd. (2.2 ns). In the aggregates of ionic amphiphiles such as Na octanoate, octylammonium chloride, and n-C₁₂H₂₅NMe₃⁺ Cl⁻, the rotational correlation time of both I increased with the detergent concn. In micelles of the nonionic pentaethylene glycol mono-n-dodecyl ether, no such concn. dependence was found. The large I mols. perturb the relatively small ionic aggregates, whereas the large nonionic ones are much less affected.

Linear-**dichroism** studies of I in lamellar liq. crystals showed that both are oriented with their long axis preferentially parallel to the plane of a bilayer.

L8 ANSWER 60 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <https://chemport.cas.org/cgi-bin/cp_sdcgi?X@8R0T4lN0MT0XrfG9bxU4IZuoJyyT07NEFZk9cH5sutzyr5ZkLmk40smgysWVZ5xXsuLNjG2f8plhbdNtQq@Jgg@IfzVQCKgJHrjw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QcNfKJ0NoHs9zIeIp>

8R0T4lN0MT0XrfG9bxU4IZuoJyyT07NEFZk9cH5sutzyr5ZkLmk40smgysWVZ5xXsuLNjG2f8plhbdNtQq@Jgg@IfzVQCKgJHrjw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QcNfKJ0NoHs9zIeIp>

AN 96:219248 CA

TI Effect of polar substituents and polymethine chain length on the color of cyanine dyes of the benz[**cd**]indole series

AU Mikhailenko, F. A.; Vasilenko, N. P.; Kachkovskii, A. D.; Rozhinskii, Yu. I.

CS USSR

SO Zhurnal Organicheskoi Khimii (1982), 18(2), 435-41

CODEN: ZORKAE; ISSN: 0514-7492

DT Journal

LA Russian

AB Substituents in position 6 of sym. carbocyanines I (R = H, Cl, OMe, OEt, NMe₂, NO₂; R₁ = Me, Et; X- = anion, n = 1), whether electron-donating or -withdrawing, shift the λ_{\max} to longer wavelength by ≤ 112 nm (Me₂N). For I (R = H, R₁ = Et) λ_{\max} increased from 760 nm for n = 1 to 860 nm for n = 2 and 972 nm for n = 3. Substituents in positions other than 6 have a smaller effect; e.g., 5-OEt causes no shift.

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Full Text <https://chemport.cas.org/cgi-bin/cp_sdcgi?u@8RSTq1N0MT0Xr4G9bxU4IZuoJyyT07NEFZk9cH5sutzyrrZkLmk40smgysWVZ5xXsgLNjG2f8plhbdNtQU@Jgg@IfzVQCKgJHEjw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QcNfKJkNoH@9gIeIp>

8RSTq1N0MT0Xr4G9bxU4IZuoJyyT07NEFZk9cH5sutzyrrZkLmk40smgysWVZ5xXsgLNjG2f8plhbdNtQU@Jgg@IfzVQCKgJHEjw4mBt6umJldv2Ykdjsy4GmOTXxh3mhHjhz3QcNfKJkNoH@9gIeIp>

AN 94:199954 CA

TI Fluorescence detected linear **dichroism**. A new method for studies of molecular orientation in uniaxial systems

AU Johansson, Lennart B. A.; Lindblom, Goeran; Nagvi, K. Razi

CS Chem. Cent., Univ. Lund, Lund, S-220 07, Swed.

SO Journal of Chemical Physics (1981), 74(7), 3774-8

CODEN: JCPSA6; ISSN: 0021-9606

DT Journal

LA English

AB A theor. and exptl. description of a new light spectroscopic method for detn. of 2nd rank order parameters is presented. The linear **dichroism** is obtained from the total fluorescent intensity, measured by using an integrated sphere. The method was tested on a **dichroic** sample consisting of a stretched polymer film with an incorporated dye (2,2'-diethylthiocarbocyanine iodide). The main advantages of using emitted light are the high sensitivity and selectivity. With the method described the mol. orientation of a fluorophore in a mixt. of other absorbing chromophores may be studied. The integrating sphere should be used in detns. of excitation spectra and for measurements of fluorescence detected **CD**.

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Full Text <https://chemport.cas.org/cgi-bin/cp_sdcgi?GRT@@8HsGuB8i8oHQLTCbCJsivsm4FfthkkevQhEpojmtolPi8zf9Byy8XSmJECay39wtYergtLmTSwCTwguX8ig4dSer n6Zfe22jjztkgi7C2ECOhiSvBmTHBE099HtIyrCtYmklQUv8uqaGGoLgzgc>

8HsGuB8i8oHQLTCbCJsivsm4FfthkkevQhEpojmtolPi8zf9Byy8XSmJECay39wtYergtLmTSwCTwguX8ig4dSer n6Zfe22jjztkgi7C2ECOhiSvBmTHBE099HtIyrCtYmklQUv8uqaGGoLgzgc>

AN 92:169877 CA

TI Organized monolayers by adsorption. II. Molecular orientation in mixed dye monolayers built on anisotropic polymeric surfaces

AU Sagiv, Jacob

CS Abt. Mol. Syst., Max-Planck-Inst. Biophys. Chem., Goettingen, D 3400, Fed. Rep. Ger.

SO Israel Journal of Chemistry (1980), Volume Date 1979, 18(3-4), 339-45

CODEN: ISJCAT; ISSN: 0021-2148

DT Journal

LA English

AB Methods for producing close-packed monolayers with controllable mol. organization in the layer plane are investigated. Adsorption of oleophobic monolayers (octadecyltrichlorosilane contg. dyes on smooth surfaces of stretched polyvinyl alc. films gave a preferred orientation of the dye chromophores resembling the uniaxial distribution pattern of the polymeric chains forming the surface of the support. As a by-product of this study, the surface compn. and structure of 2 types of oxidized polyethylene were investigated. Information regarding the structure of a polar solid surface may be obtained by studying the mol. organization induced in a mixed dye monolayer adsorbed on that surface. The orientational effects were estd. from linear **dichroism** measurements.

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Full Text <https://chemport.cas.org/cgi-bin/cp_sdcgi?

[bRk@o82s2uB828G54LkCx pJmibs64OfJhkkuvQhypojoTAPiFzk9yy8XSm JECayN9wtYergtLmTSwCTMguX8ig4dSern6Zfw22jjztkgi7C2ECOhiSvBmTHBE099HtIyrCtYmk13xvFuTaqG2oKgigc>](https://chemport.cas.org/cgi-bin/cp_sdcgi?bRk@o82s2uB828G54LkCx pJmibs64OfJhkkuvQhypojoTAPiFzk9yy8XSm JECayN9wtYergtLmTSwCTMguX8ig4dSern6Zfw22jjztkgi7C2ECOhiSvBmTHBE099HtIyrCtYmk13xvFuTaqG2oKgigc>)

AN 87:50920 CA

TI Changes in absorption, fluorescence, **dichroism**, and birefringence in stained giant axons: optical measurement of membrane potential

AU Ross, W. N.; Salzberg, B. M.; Cohen, L. B.; Grinvald, A.; Davila, H. V.; Waggoner, A. S.; Wang, C. H.

CS Sch. Med., Yale Univ., New Haven, CT, USA

SO Journal of Membrane Biology (1977), 33(1-2), 141-83
CODEN: JMBBBO; ISSN: 0022-2631

DT Journal

LA English

AB The absorption, fluorescence, **dichroism**, and birefringence of stained squid axons were measured during action potentials and voltage clamp steps to find large optical signals that could be used to monitor membrane potential. Changes in all 4 optical properties were found that were linearly related to membrane potential. Photodynamic damage was greatly diminished; with a merocyanine-rhodanine dye, the photodynamic damage assocd. with intense light and the presence of O was negligible. The absorption change obtained with this dye was relatively large.

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Full Text <https://chemport.cas.org/cgi-bin/cp_sdcgi?

[bRk@C82s2uB828Gm4LkCx pJmibs64OfJhkkuvQhypojoTYPiFzk9yy8XSm JECay89wtYergtLmTSwCToguX8ig4dSern6Zfw22jjztkgi7C2ECOhiSvBmTHBE099HtIyrCtYmk1VxvFuTaqGzoKg6gQ>](https://chemport.cas.org/cgi-bin/cp_sdcgi?bRk@C82s2uB828Gm4LkCx pJmibs64OfJhkkuvQhypojoTYPiFzk9yy8XSm JECay89wtYergtLmTSwCToguX8ig4dSern6Zfw22jjztkgi7C2ECOhiSvBmTHBE099HtIyrCtYmk1VxvFuTaqGzoKg6gQ>)

AN 87:31871 CA

TI Spectroscopic study on the J-aggregate of cyanine dyes. III. Effect of meso substituents on molecular association of cyanine dyes

AU Honda, Chika; Hada, Hiroshi

CS Dep. Ind. Chem., Kyoto Univ., Yoshida, Japan

SO Photographic Science and Engineering (1977), 21(2), 97-102
CODEN: PSENAC; ISSN: 0031-8760

DT Journal

LA English

AB The effects of meso substituents, such as Me, Et, and Ph substituents, on the mol. assocn. were studied for thiacyanocyanine dyes. These effects were seen in the absorption spectra of polymol. assoc., but not in those of trimers and dimers, in aq. soln. An induced Cotton effect of the polymol. assoc. was obsd. The CD of H*-aggregate was obsd. by regular stirring of the soln. These effects are discussed with schematic models of the assoc. and electronic states of the dye mols. obtained by means of calcns. in extended Hueckel method, and in terms of hydrophobic bonding. The size and shape of meso substituents are important for detn. of arrangement of dye mols. in polymol. assoc. in aq. soln.

L8 ANSWER 72 OF 87 CA COPYRIGHT 2003 ACS on STN

Full Text <https://chemport.cas.org/cgi-bin/cp_sdcgi?

[bRk@o82s2uB828GP4LkCx pJmibs64OfJhkkuvQhypojoTGPiFzk9yy8XSm JECayy9wtYergtLmTSwCTHguX8ig4dSern6Zfu22jjztkgi7C2ECOhiSvBmTHBE099HtIyrCtYmk1VxvFuTaqGzoKg6gQ>](https://chemport.cas.org/cgi-bin/cp_sdcgi?bRk@o82s2uB828GP4LkCx pJmibs64OfJhkkuvQhypojoTGPiFzk9yy8XSm JECayy9wtYergtLmTSwCTHguX8ig4dSern6Zfu22jjztkgi7C2ECOhiSvBmTHBE099HtIyrCtYmk1VxvFuTaqGzoKg6gQ>)

AN 87:31870 CA

TI Spectroscopic study on the J-aggregate of cyanine dyes. II. Circular

dichroism of J-aggregates

AU Honda, Chika; Hada, Hiroshi
CS Dep. Ind. Chem., Kyoto Univ., Yoshida, Japan
SO Photographic Science and Engineering (1977), 21(2), 91-6
CODEN: PSENAC; ISSN: 0031-8760
DT Journal
LA English
AB An induced Cotton effect of J-aggregates by addn. of di-K L(+)-tartrate (TTK2) for planar cyanine dyes was obsd. The CD of J-aggregates induced by regular stirring of the soln. was obsd. for some aq. solns. of J-aggregates. These observations suggest that J-aggregates have a layered structure including anions between layers in aq. solns.

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Full Text <[https://chemport.cas.org/cgi-bin/cp_sdcgi?](https://chemport.cas.org/cgi-bin/cp_sdcgi?TRT@v8HsGuB8i8oiQLTCb CJsiVsm4FfthkkevQhEpojmttoJPI8zf9Byy8XSm JECays9wtYergtLmTSwCTzguX8ig4dSern6ZfU22jjztkgi7C2ECOhiSvBmTHBE099HtIyrCtYmk17xvFufaqGgoLgJgc)

[TRT@v8HsGuB8i8oiQLTCb CJsiVsm4FfthkkevQhEpojmttoJPI8zf9Byy8XSm JECays9wtYergtLmTSwCTzguX8ig4dSern6ZfU22jjztkgi7C2ECOhiSvBmTHBE099HtIyrCtYmk17xvFufaqGgoLgJgc](https://chemport.cas.org/cgi-bin/cp_sdcgi?TRT@v8HsGuB8i8oiQLTCb CJsiVsm4FfthkkevQhEpojmttoJPI8zf9Byy8XSm JECays9wtYergtLmTSwCTzguX8ig4dSern6ZfU22jjztkgi7C2ECOhiSvBmTHBE099HtIyrCtYmk17xvFufaqGgoLgJgc)>

AN 84:179057 CA

TI Circular **dichroism** of polymolecular associate, J-aggregate, of 1,1'-diethyl-2,2'-cyanine chloride by regular stirring of the solution

AU Honda, Chika; Hada, Hiroshi
CS Dep. Ind. Chem., Kyoto Univ., Kyoto, Japan
SO Tetrahedron Letters (1976), (3), 177-80
CODEN: TELEAY; ISSN: 0040-4039

DT Journal
LA English

AB Clockwise stirring at ≈ 1000 rpm of an aq. soln. of 1,1'-diethyl-2,2'-cyanine chloride (I) contg. K₂SO₄ induced J-aggregate CD as shown by the neg. Cotton effect at 572 nm (J-band). Anticlockwise stirring gave rise to a pos. Cotton effect. Stirring of a more viscous soln. of I contg. KCl gave rise to a split J-band due to interactions between J-aggregates. Na 1,1'-diethyl-3,3'-disulfobutyl-5,5',6,6'-tetrachlorobenzimidazolocarbo-cyanine and 3,3',9-triethyl-5,5'-dichlorothiaca-cyanine chloride behaved similarly.

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Full Text <[https://chemport.cas.org/cgi-bin/cp_sdcgi?BRk@](https://chemport.cas.org/cgi-bin/cp_sdcgi?BRk@182s2uB828GV4LkCx pJmibs640fJhkkuvQhypojoT3PiFzk9yy8XSm JECayF9wtYergtLmTSwCThguX8ig4dSern6Zf822jjztkgi7C2ECOhiSvBmTHBE099HtIyrCtYmk135vZusaqGzoKgZgp)

[182s2uB828GV4LkCx pJmibs640fJhkkuvQhypojoT3PiFzk9yy8XSm JECayF9wtYergtLmTSwCThguX8ig4dSern6Zf822jjztkgi7C2ECOhiSvBmTHBE099HtIyrCtYmk135vZusaqGzoKgZgp](https://chemport.cas.org/cgi-bin/cp_sdcgi?BRk@182s2uB828GV4LkCx pJmibs640fJhkkuvQhypojoT3PiFzk9yy8XSm JECayF9wtYergtLmTSwCThguX8ig4dSern6Zf822jjztkgi7C2ECOhiSvBmTHBE099HtIyrCtYmk135vZusaqGzoKgZgp)>

AN 79:32693 CA

TI Induced optical activity of complexes of dyes with deoxyribonucleic acid

AU Permogorov, V. I.
CS USSR
SO Optika i Spektroskopiya (1973), 34(2), 298-304
CODEN: OPSPAM; ISSN: 0030-4034

DT Journal
LA Russian

AB The absorption spectrum of I dye [37005-92-8] in EtOH has only 1 max. corresponding to .sim.16.5 .tim. 10⁻³ cm⁻¹ frequency. When deoxyribonucleic acid [9007-49-2] (DNA) is added, the absorption acquires a second max. at .sim.20 .tim. 10⁻³ cm⁻¹. This is caused by the interaction between I and DNA. Similar spectral changes are obsd. when DNA complexes with dye II [23792-51-0], dye III [23104-60-1], dye IV [41075-55-2], and dye V [41011-59-0]. An attempt to elucidate the nature of these complexes by the CD method was not successful. The CD of the dyes and of dye-DNA complexes were similar. This is due to the vibronic borrowing (Fulton, T.; Gouterman, N., 1964).

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Full Text <[https://chemport.cas.org/cgi-bin/cp_sdcgi?](https://chemport.cas.org/cgi-bin/cp_sdcgi?vRT@C82s2uB828Gd4LkCx pJmibs640fJhkkuvQhypojoT3PiFzk9yy8XSm JECayH9wtYergtLmTSwCTkguX8ig4dSern6Zf122jjztkgi7C2ECOhiSvBmTHBE099HtIyrCtYmk1Q5v8ugaqGgoLgzgc)

[vRT@C82s2uB828Gd4LkCx pJmibs640fJhkkuvQhypojoT3PiFzk9yy8XSm JECayH9wtYergtLmTSwCTkguX8ig4dSern6Zf122jjztkgi7C2ECOhiSvBmTHBE099HtIyrCtYmk1Q5v8ugaqGgoLgzgc](https://chemport.cas.org/cgi-bin/cp_sdcgi?vRT@C82s2uB828Gd4LkCx pJmibs640fJhkkuvQhypojoT3PiFzk9yy8XSm JECayH9wtYergtLmTSwCTkguX8ig4dSern6Zf122jjztkgi7C2ECOhiSvBmTHBE099HtIyrCtYmk1Q5v8ugaqGgoLgzgc)>

AN 72:16935 CA

TI Electron spectra of biscyanines

AU Permogorov, V. I.; Dyadyusha, G. G.; Mikhailenko, F. A.; Kiprianov, A. I.
CS Vses. Nauch.-Issled. Inst. Genet. Selektiv. Mikroorg., Moscow, USSR
SO Doklady Akademii Nauk SSSR (1969), 188(5), 1098-101 [Phys Chem]
CODEN: DANKAS; ISSN: 0002-3264
DT Journal
LA Russian
AB The absorption and luminescence spectra were reported for biscyanines of the types shown, in EtOH. These were supplemented by ORD spectra and circular **dichroism** plots for the complexes of these substances with DNA. The absorption spectra of all 3 types of dyes taken best at 120°K for better resolu. showed 4 max., while luminescence spectra had 2 max. and had mirror image relation with 2 of the max. in the absorption spectra. Hence, the 1st 2 max. are vibrational transitions of the principal electronic band and the remaining 2 bands are caused by a new electronic transition. The luminescence excitation spectra of these dyes are quite coincident with their absorption spectra. Excitation with polarized light generated luminescence that was distinctly polarized also; the change in the sign of polarization showed that 2 electronic transitions are involved. The mol. conformation does not change during the life of the excited state. Adsorption of the dyes on DNA resulted in asymmetrization of total structure and generation of optical activity as expected from general theory of optical activity dating back to Kuhn.

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